REMARKS/ARGUMENTS

Applicants respond herein to the Final Office Action dated March 9, 2007.

Applicants' attorneys appreciate the Examiner's continued thorough search and examination of the present patent application.

Claims 1-20 are pending in this application. Claims 1-20 have been rejected.

Claims 1, 3-10 and 12-20 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,990,061 to Deneire et al. ("Deneire").

Claims 2 and 11 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Deneire in view of U.S. Patent Application Publication No. 2001/0006006 to Hill ("Hill").

Reconsideration and withdrawal of these rejections are respectfully requested.

The invention according to independent claims 1, 10 and 19 relates to determining the frequency transfer function of a radio wave by estimating radio wave propagation characteristics on the basis of a ray tracing technique that traces courses of a plurality of rays that approximate the radio wave radiated from a transmission point and detects the rays arriving at a reception point. Accordingly, because the rays that approximate the radio wave are used, there is no need to radiate an actual radio wave in a real physical space.

In col. 10, lines 29-32 Deneire discloses the following:

> "To evaluate the performances of the ML estimator, and compare it with the LMMSE algorithm, we simulate a spectral shaping system and a PSAM-based system in an indoor radio channel."

and further, at col. 10, lines 39-40, Deneire teaches that "[t]he channel is modeled by means of a ray-tracing technique." That is, Deneire uses ray-tracing technique to evaluate the performances of the ML estimator and to compare it with the LMMSE algorithm. There is no discussion or suggestion in the Deneire specification of the use of a ray-tracing technique to estimate the radio wave propagation characteristics.

Instead, in its Abstract Deneire discloses the following:

> "... the method comprising transmitting N_U reference tones from the transmitting peer to the receiving peer; capturing the N_U reference tones at the receiving peer; and determining at the receiving peer from the N_U reference tones the maximum likelihood frequency domain estimate of the channel response at N_F predetermined frequencies by directly exploiting the finiteness of the time response of the channel."

and further, at col. 2, lines 60-65 Deneire continues as follows:

> "It is a first aspect of the invention that a channel estimation method is presented with provides a maximum likelihood estimate of the frequency response of the channel. A channel between at least one transmitting peer and at least one receiving peer is considered. N_U reference tones are transmitted."

Therefore, contrary to the teachings of the present application, Deneire requires actual radiation of the N_U reference tones (radio waves) in the real physical space.

Claim 10 is directed to a method of estimating characteristics of radio wave propagation. The method calls for determining a frequency transfer function of a radio wave by "combining the determined frequency transfer functions of said plurality of bands for estimating the radio wave propagation characteristics of said target radio communication system on the basis of the combined frequency transfer functions". Examples of combining of frequency transfer functions are illustrated in Figures 6a and 6b of the present application, which show radio wave frequencies f1 to fM processed respectively by the corresponding band pass filters to produce frequency transfer functions S1, S2, S3,...,SM as shown in FIG. 6A. The frequency transfer functions S1 to SM are then smoothed and synthetically combined as shown in FIG. 6B. Claims 1, 19, and 20 have been similarly amended to recite combining the determined frequency transfer functions. Support for the above-quoted recitation is found at page 13, line 13 to page 14, line 17 of the present application.

As admitted by the Examiner on page 5 of the Office Action, Deneire does not teach filtering, arranging and combining the frequency transfer functions. Thus, Deneire does not teach, disclose, or suggest the above quoted recitation of independent claims 1, 10, 19, and 20 and therefore, does not anticipate these claims.

The Examiner has referenced Hill, page 7, paragraph [0123] as teaching the limitations of claims 2 and 11, on the grounds that the results of varying frequencies and the interference of reflections can be seen visually. However, Hill does not teach the combining of frequency transfer functions as recited in independent claims 1, 10, 19, and 20.

Further, Hill does not teach, disclose, or suggest "combining the filtered frequency transfer functions" recited in independent claims 2 and 11 and therefore, does not anticipate or render these claims obvious.

Claims 2-9 and 11-18 depend directly or indirectly from the above discussed independent claims and are, therefore, allowable for the same reasons, as well as because of the combination of features in those claims with the features set forth in the respective independent claims.

Accordingly, the Examiner is respectfully requested to reconsider the application, allow the claims as amended and pass this case to issue.

THIS CORRESPONDENCE IS BEING SUBMITTED ELECTRONICALLY THROUGH THE PATENT AND TRADEMARK OFFICE EFS FILING SYSTEM ON June 11, 2007.

Respectfully submitted,

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